"PATENT"

APPEAL BRIEF TRANSMITTAL FORM

In re application of: Paul J. Berlowitz et al
U.S. Serial No.: 09/922,321 [400100]
Filed: August 3, 2001
For: WIDE CUT FISCHER-TROPSCH DIESEL FUELS

) Before the Board of
) Patent Appeals and Interferences
) Examiner: Margaret B. Medley
)
) Confirmation Number: 8067
) Group Art Unit: 1714
) Family Number: P2000J040A

Commissioner for Patents
Mail Stop Appeal Brief - Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

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KATHLEEN A. KUNA — Type or print name of person signing certification

Kathleen A. Kuna — Signature

MAY 26, 2004 — Date

Enclosed is the Appeal Brief in the above-noted application, in triplicate (send in triplicate even when faxing).

The item(s) check below are appropriate:

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[ ] Petition for extension of time pursuant to 37 CFR 1.136 and 1.137 is hereby made if, and to the extent, required. The fee for this extension of time is calculated to be $_____ to extend the time for filing this paper until _____.

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5/26/04
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5/26/2004

"PATENT"

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Sir:

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 1.192

Real Party In Interest

The invention presented in this application is assigned to ExxonMobil Research and Engineering Company.

Related Appeals and Interferences

There are no interferences or other appeals pending in related applications of which directly affect or be affected by, or have a bearing on the Board's decision in this appeal.

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KATHLEEN A. KUNA	Kathleen A. Kuna	MAY 26, 2004
Name of person signing certification	Signature	Date

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Status of Claims

Claims 1, 8-11, 13 and 15-22 are pending and stand rejected by the Examiner under 35 U.S.C. § 103(a).

Claim 21 is objected to because of formalities.

Claims 2-7, 12 and 14 have been cancelled.

The rejection of claims 1, 8-11, 13 and 15-22 is appealed.

Status of Amendments

No amendments or submissions have been filed by the Appellant after the final rejection.

Summary of the Invention

Appellants' invention relates to a wide-cut Fischer-Tropsch derived diesel fuel wherein the fuel boils in a wider range than a conventional diesel fuel while having favorable low temperature and emission properties (see paragraph [0002], lines 10-12).

More specifically, the fuel is comprised of a Fischer-Tropsch hydrocarbon distillate having a T90 greater than 640°F but less than 1000°F, and a cloud point and cold filter plugging point of less than or equal to +5°C (see paragraph [0009], lines 10-19). The fuel also contains <10 ppm sulfur and nitrogen, <2 wt% aromatics, <0.1 wt% polyaromatics, a cetane number >65, and a density >0.78 (see paragraph [0009], lines 21-31).

Issues

(1) Whether the Examiner properly rejected claims 1, 8-11, 13 and 19-20 under 35 U.S.C. § 103(a) based on Pedersen (WO 00/12654).

(2) Whether the Examiner properly rejected claims 21-22 under 35 U.S.C. § 103(a) based on Pedersen (WO 00/12654) and further in view of Den (US 4,684,786).

Grouping of the Claims

Appellants group the claims as follows:

Group I having claim 1.

Group II having claims 8, 9, 10, 11, 13, 15, 16, 17, 18, 19 and 20.

Group III having claims 21 and 22.

Argument

A. The Group I claims:

The Examiner improperly rejected the Group I claims under 35 U.S.C. § 103(a) based on Pedersen (WO 00/12654).

Appellants' invention, as set forth in the Group I claim, is directed to a diesel fuel comprised of a Fischer-Tropsch distillate having a T90 greater than 338°C, but less than 538°C and a cold filter plugging point of less than or equal to +5°C.

Pedersen (WO 00/12654) discloses a diesel fuel having a T90 from about 590°F to 640°F, but is silent regarding a cold filter plugging point. In her rejection, the Examiner stated that because Pedersen teaches a distillate fuel having the same T90 and other physical properties, then Pedersen inherently has the same cold filter plugging point (CFPP) as the fuel of the Appellants' invention. Appellants contend otherwise.

It is well-settled Federal Circuit law that the extrinsic evidence must make clear that the inherent characteristic being asserted by the Examiner is necessarily present in the product of the prior art. Furthermore, inherency may not be established by probabilities or possibilities. *In re Robertson*, 169 F. 3d 743, 49 USPQ 2d 1949 (Fed. Cir. 1999). The fact that a certain result or characteristic may occur or be present in the prior is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F. 3d 1531, 1534, 28 USPQ 2d 1955, 1957 (Fed. Cir. 1993).

The Examiner has not provided any additional evidence to show that the CFPP is necessarily present in Pedersen. Despite sharing certain physical characteristics, Pedersen does not share the most important characteristic attributable to achieving a CFPP of +5°C or less -- the hydrocarbon structure of the product. As is clearly stated on page 8, lines 19-29 of the present specification, the CFPP is achieved through the catalytic dewaxing with a selective catalyst of the normal paraffins to isoparaffins. This isomerization of the paraffins is what allows the fuel to achieve superior cold flow properties while maintaining the low emission properties. Contrarily, Pedersen does not catalytically dewax or hydroisomerize the majority of the paraffins in the feed. In fact, Pedersen never even suggests that the feed is predominantly paraffinic or that it should be isomerized to achieve cold flow properties in combination with the emission properties.

Although Pedersen does not explicitly exclude Fischer-Tropsch feeds, it is clear that Pedersen only considered using a petroleum feed because he states that the feedstock contains aromatics "in an amount and of a type such that, after processing in the hydrotreating zone and in the hydrocracking zone, the aromatics content is reduced to the desired level in the resulting diesel fuel product". (See Pedersen, page 7, lines 24-27.) If Pedersen contemplated a Fischer-Tropsch feed, there would be no need to hydrotreat to reduce the level of aromatics because Fischer-Tropsch feeds by nature have extremely low aromatics levels. And, as a person of ordinary skill in the art knows, the type of feed will directly affect the resulting product after catalytic hydroisomerization. Thus, because the feeds of the present invention and Pedersen are very different, then the resulting product after hydroisomerization and/or hydrotreating is sure to be different.

Furthermore, a person of ordinary skill in the art knows that CFPP and T90 are separate and independent properties, and one has no bearing on the other. In this regard, it would be simply erroneous to conclude that because a T90 falls within a given range, then the CFPP must fall within a predicted range as well. As stated above, the molecular structure of the hydrocarbons is responsible for providing the CFPP property.

It is clear, then, that although the products of Pedersen and the present invention share certain physical characteristics, the chemical structure of the products are quite different, and it is this difference (i.e., the predominantly isoparaffinic nature of the present invention) that give the present invention superior emission *and* cold flow properties.

In view of the foregoing, Pedersen fails to render the present invention obvious under 35 U.S.C. § 103(a).

B. The Group II claims:

The Examiner improperly rejected the Group II claims under 35 U.S.C. § 103(a) in view of Pedersen (WO 00/12654).

Pedersen teaches a composition with less than 1.5 wt% polyaromatics, whereas Appellants teach less than 0.1 wt% polyaromatics. Although the present invention overlaps Pedersen at the extreme low end (i.e., $\leq$ 0.1 wt%), the amount of polyaromatics that Pedersen allows for on the high end (i.e., 0.5-1.5 wt%) would prevent the present invention from achieving a CFPP of +5°C. The polyaromatics would plate out on the filter, causing the CFPP to be much greater. Thus, this is further proof that Pedersen does not necessarily have a CFPP of +5°C or less in all instances.

Therefore, based on the reasons presented above, it is clear that Pedersen does not render the Group II claims obvious.

C. The Group III claims:

The Examiner improperly rejected the Group III claims under 35 U.S.C. 103(a) in view of Pedersen (WO 00/12654) and Derr (U.S. 4,684,786).

The Examiner stated in her rejection that it would be obvious to the person of skill in the art to use a second reaction zone in the presence of a catalytic dewaxing catalyst in view of the teachings of Derr. Derr is directed to the catalytic dewaxing of a Fischer-Tropsch wax made from a synthesis gas feed ratio of 1:1 or less. In fact, Derr specifically states that "an important aspect of this invention is directed to converting relatively low H_2/CO ratio syngas (1:1 or less H_2:CO ratio)" col. 2, lines 45-48. The description in Derr further describes the reason this low syngas ratio is critical to Derr's invention. Conversely, the present invention uses a syngas feed ratio of at least 1.7:1,

much higher than that of Derr. Derr's use of a low ratio syngas feed is a distinct and important difference when compared to the present invention. This is a teaching away from the present invention.

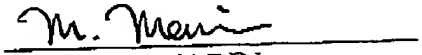
Furthermore, the arguments previously presented in regards to Pedersen also apply to the present group of claims.

Therefore, since a teaching away is evidence of non-obviousness, this combination of Pedersen and Derr fails to render the Group III claims obvious.

Relief Sought

Appellants believe that their position that the claimed invention is not obvious from the prior art is set forth in detail herein, and Appellants respectfully request the Honorable Board to reverse the Examiner's rejection.

Respectfully submitted,



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[X] Pursuant to 37 CFR 1.34(a)

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APPENDIX

Claim 1. A fuel, useful as a diesel fuel comprising a Fischer-Tropsch derived hydrocarbon distillate having 338°C < T90 < 538°C and a cold filter plugging point of less than or equal to +5°C.

Claims 2-7. Cancelled

Claim 8. A fuel according to claim 1 wherein the hydrocarbon distillate contains:

<10 wppm Sulfur, Nitrogen
<2 wt % aromatics
<0.1 wt % polyaromatics.

Claim 9. A fuel according to claim 1 wherein the hydrocarbon distillate contains:

<5 wppm Sulfur, Nitrogen
<1 wt % aromatics
<0.1 wt % polyaromatics.

Claim 10. A fuel according to claim 1 wherein the hydrocarbon distillate contains:

<1 wppm Sulfur, Nitrogen
<0.1 wt % aromatics
<0.1 wt % polyaromatics.

Claim 11. A fuel according to claim 1 wherein the hydrocarbon distillate has a cetane number greater than 65.

Claim 12. Cancelled

Claim 13. A method of reducing smoke during operation of a diesel engine comprising combusting a Fischer-Tropsch derived hydrocarbon distillate having a 338°C < T90 < 538°C and containing;

<10 wppm Sulfur, Nitrogen

<2% aromatics

<0.1% polyaromatics

wherein the cold filter plugging point of the distillate is less than or equal to +5°C.

Claim 14. Cancelled

Claim 15. A method according to claim 13 wherein the hydrocarbon distillate has a having 371°C < T90 < 482°C.

Claim 16. A method according to claim 13 wherein the hydrocarbon distillate has a having 371°C < T90 < 427°C.

Claim 17. A method according to claim 13, 14, 15 or 16 wherein the hydrocarbon distillate has a cold filter plugging point of less than or equal to -15°C.

Claim 18. A method according to claim 13, 14, 15 or 16 wherein the hydrocarbon distillate has a cold filter plugging point of less than or equal to -30°C.

Claim 19. A method according to claim 13 wherein the hydrocarbon distillate contains:

<5 wppm Sulfur, Nitrogen

<1 wt % aromatics

<0.1 wt % polyaromatics

and has a cetane number greater than 65.

Claim 20. A method according to claim 19 wherein the hydrocarbon distillate contains:

<1 wppm Sulfur, Nitrogen

<0.1 wt % aromatics

<0.1 wt % polyaromatics

and has a cetane number greater that 70.

Claim 21. A method of making a fuel of claim 1, the method comprising:

(a) passing a 149°C+ Fischer-Tropsch derived hydrocarbon fraction into a first reaction zone comprising a hydroisomerization catalyst, said Fischer-Tropsch derived hydrocarbon fraction being derived from a Fischer-Tropsch process wherein a synthesis gas feed used in the process comprises a mixture of H_2 and CO in a ratio of at least 1.7:1;

(b) hydroisomerizing the 49°C+ fraction over the hydroisomerization catalyst to form a first effluent;

(c) passing at least a portion of liquid product from the first effluent into a second reaction zone comprising a catalytic dewaxing catalyst;

(d) dewaxing the first effluent over the dewaxing catalyst to form a second effluent; and

(e) distilling the second effluent to recover a hydrocarbon product with a 338°C < T90 < 538°C and a cold filter plugging pint of less than or equal to +5°C.

Claim 22. A method according to claim 21 wherein the hydrocarbon distillate contains:

<1 wppm Sulfur, Nitrogen

<0.1 wt % aromatics

<0.1 wt % polyaromatics

and has a cetane number greater than 65.